



Status Report

Warwick Sewers Bayside Segment
Warwick, Rhode Island

Mill Cove Brook Archaeological Site
Feature Identification and Preliminary
Interpretations

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Introduction

The Warwick Sewer Authority (WSA) is planning and coordinating the construction of sewer lines within the Warwick Neck - Bayside community of the City of Warwick, Rhode Island (Figure 1). The funding for the Warwick Sewers project includes federal monies. Accordingly, the undertakings are subject to Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and subject to review by the State Historic Preservation Officer (SHPO). The firm of Gordon R. Archibald, Inc. (GRA) contracted with PAL for a cultural resource management survey to consider potential historic properties within the undertaking's Area of Potential Effect (APE).

PAL completed a Phase I(a) Archaeological Assessment survey within the Bayside I, Bayside II, Bayside III, and Longmeadow sewer segments between March 2006 and July 2008. Areas of high and moderate sensitivity to contain archaeological deposits in meaningful contexts were designated and recommended for further Phase I(c) investigation (Figure 2). PAL recommended Phase I(c) archaeological survey to sample areas of assigned sensitivity, refine assigned sensitivity, and determine the presence/absence and range of features and site types that exist within the planned sewer easements.

Interpretive Context; the Archaeological Record

Archaeological research in Rhode Island has demonstrated that distinctive patterns of Native American land use correlate with temporal periods, contrasting topographic relief, drainage characteristics,; and soil types (Rhode Island Historic Preservation Commission [RIHPC] 1986). In general, Native populations were concentrated in zones of greatest resource potential for game, fish and shellfish, and eventually horticulture. The coastal/estuarine margins were most productive in this regard. The corridor of wetlands in interior mainland Rhode Island represents an ecologically diverse environ that was periodically targeted and exploited as early as the PaleoIndian Period. Exploitation of this region became intense about 4,200 years ago by the manufacturers of Small

Stemmed tradition projectile points (Waller and Leveillee 2002a, 2002b). Following 3,000 years ago, people adapted to a coastal or estuarine-focused system that included larger settlements of extended or continuous duration and increased reliance on marine resources (Leveillee and Harrison 1996; Waller 2000).

Archaeological evidence indicates Rhode Island's postglacial landscape was occupied relatively infrequently between 12,500 and 5000 years before present (B.P.). PaleoIndians hunted large migratory game such as caribou (Meltzer and Smith 1986; Spiess et al. 1998) and opportunistically exploited readily available plant and animal species. PaleoIndian artifacts from southern Rhode Island are limited to isolated fluted projectile points from Barrington (Rhode Island Historical Society 1936), Lincoln (Fowler 1952), North Kingstown (Leveillee and Van Couyghen 1990), Westerly (Turnbaugh 1980), and from the Great Swamp Management Area of South Kingstown (George et al. 1993). Available data suggest that PaleoIndian settlement and/or exploitation was focused along postglacial wetlands, glacial lakes, and riverine settings.

Early Archaic (10,000–7500 B.P.) sites in the region are similarly scarce, consisting of low-density recoveries of diagnostic bifurcate-based projectiles from the west bay area at the multicomponent Sweet Meadow Brook Site (Fowler 1956) and off Cedar Tree Point (Leveillee 2005). The low frequency of Early Archaic finds is suggestive of brief occupations by highly mobile peoples (Waller and Leveillee 2002b). The proximity of Early Archaic sites to wetland locations implies that regionally, wetland resources became increasingly important during the Early Archaic Period (Nicholas 1987).

Documented Middle Archaic sites (7500–5000 B.P.) are more numerous relative to earlier sites or components. An increase in the frequency and visibility of occupation in the region dating to the period (as reflected in diagnostic point finds, often on multicomponent sites dominated by later occupations) suggests that peoples were established in, and had a comprehensive knowledge of resources within southern New England by 7500 B.P. Regionally, non-local and extra-regional lithic materials, which include quartzite and varieties of rhyolite, dominate Middle Archaic assemblages. The correlation of regional lithic material types and Middle Archaic site distributions led Dincauze (1976) to conclude that Native American band or tribal territories had been established within major river drainages across the region by this time. The location of many of Rhode Island's documented Middle Archaic sites demonstrates a strong focus within the region's interior wetland environs with a settlement system that involved large base camps supplemented by smaller limited duration logistical camps and exploitation sites occupied by few individuals (Waller and Leveillee 2002b).

Late Archaic Period (5000–3000 B.P.) archaeological sites are well-represented in Rhode Island, and by their numbers indicate substantial (and likely permanent) populations of Native Americans in the area after 5,000 years ago. Three distinct cultural traditions, Laurentian, Small Stemmed, and the Susquehanna, are identifiable in the regional archaeological record between 5000 and 3000 radiocarbon years B.P. The density of Late Archaic sites suggests increased Native American residency for the period (Dincauze 1975). The Laurentian tradition is the earliest cultural expression of the Late Archaic in Rhode Island. Laurentian tradition site distributions suggest an interior upland settlement focus associated with a hunter-gatherer subsistence economy. The database of Late Archaic Small Stemmed tradition archaeological sites in Rhode Island is

extensive, consisting of thousands of Small Stemmed projectiles from combined local assemblages. The Small Stemmed settlement system included large base camps concentrated along the well-drained, resource-rich banks of interior streams, ponds, and wetlands, supplemented by task-oriented, short-duration sites that targeted specific resources (Waller and Leveillee 2002b). The “cognitive landscapes” of these peoples were focused upon riverine environments, with limited exploitation of marine resources.

The Transitional Archaic Period (3600–2500 B.P.) bridges the Archaic and Woodland periods and is diagnosed in southern New England by Susquehanna tradition cultural materials and sites. Radiometric and stratigraphic information collected from archaeological sites in southern New England indicate the Susquehanna tradition was temporally contemporaneous with Late Archaic Small Stemmed projectile points (Filios 1989). The Transitional Archaic settlement pattern reflects a shift to include coastal or riverine settings with a subsistence base focused on the acquisition of riverine or estuarine flora and fauna that included fish, nuts, and small- to medium-sized mammals (Pagoulatos 1988).

The Woodland Period (3000–450 B.P.) was a time of dynamic development for southern New England’s indigenous peoples, marked by a transition from mobile hunting and collecting to sedentary horticultural settlements. Early Woodland (3000–1600 B.P.) settlement patterns were characterized by limited use of upland areas and more intensive use of coastal and estuarine resources. Coastal habitation sites and shell midden deposits from along the saltwater and estuarine margins of Maine to New York reflect increasing dependence on shellfish and other marine resources through the Early Woodland Period. Interior site locations that contain artifacts diagnostic of the Early Woodland Period are fewer than preceding periods.

Middle Woodland (1650–1000 B.P.) site distributions indicate a continued focus on coastal and riverine ecosystems. Interior Middle Woodland sites in particular are focused along major river bends and confluences. Small hunting camps were contrasted with larger residential habitations, and small “nodal” sites that specialized in the circulation of cultural materials through a formalized trade network may have been part of the regional Middle Woodland settlement system (Hecker 1995). The earliest evidence of domesticated cultigens in the region dates to around A.D. 1000, coincident with the end of the period (Bendremer and Dewar 1994; Leveillee and Harrison 1996; Leveillee et al. 2006). Traditionally the introduction, adoption, and subsequent intensification of horticulture in the Northeast has been described as a substantial alteration of previously established settlement and subsistence patterns of Archaic Period hunters and gatherers (Snow 1980).

The Late Woodland Period (1000–450 B.P.) is associated with an improvement in ceramic technology and production. The distribution of Late Woodland Period sites reflects a continuation of the Middle Woodland pattern. Sites are common within coastal environments, around interior freshwater ponds and wetlands, and adjacent to large tributary streams and rivers. Late Woodland site types included specialized exploitation areas (shell middens, hunting and processing camps, lithic workshops, etc.), small domestic sites, and larger dispersed villages (Leveillee et al. 2006). By the Late Woodland Period, maize horticulture gained increasing importance. Reduction in communal mobility influenced the development of Late Woodland territories and social structure. Social complexity, the formation of political alliances, and firm establishment of tribal territories (that may have had their beginnings as early as the Middle Archaic) appear to have solidified

during the Late Woodland (Mulholland 1988). Midwestern trade in cultural items continued into the Late Woodland. However, the importance of the Late Woodland's Midwestern trade had certainly diminished as compared with that of the preceding Middle Woodland Period.

The Narragansett Indians occupied the area, in large numbers, at the time of European-Native contact. Archaeological research within western Narragansett Bay and its periphery indicates both short and long-term logistical campsite occupations as well as more substantial domestic habitations and concentrated settlements along the near-interior and coast, with significant population densities after about 3,000 years ago. Sites include evidence of domestic activities, processing and storage areas, individual and collective burial locations, and lithic processing workshops. Surface finds at numerous locations along the coast and near-interior bodies of water indicate intensity of site densities within Narragansett territory along the western section of the bay. Fishing supplemented hunting, collecting, and planting with particular concentrations at the falls during spring fish runs. Inland and coastal ponds were fished in the winter, while shellfish beds in sheltered coves could be exploited year-round.

State site files at the RIHPHC indicate numerous sites, dating from all temporal periods clustered around the wetlands, ponds, and water courses, especially in the uplands and near-interior. Scores of sites are known around steatite source areas, rockshelters, and campsites along interior and near-interior feeder streams, and the importance of the falls is documented in historic record and Narragansett oral tradition.

Pre-contact Native American archaeological sites dating from the Middle Archaic through the Woodland Period are known in high density within today's Warwick, and on Warwick Neck. Documented sites include short-duration occupations of expeditious stone tool maintenance, hunting forays, and resource collection. Known sites include rockshelters (Rocky Point), shell middens, and campsites. Thirteen instances of isolated and clustered burials are also known to surround Greenwich Bay.

The first Europeans arrived in the western bay area between 1638 and 1640. They encountered four major subdivisions of the residing Narragansett tribe: Shawmets, Potowomuts, Cowesetts, and Pawtuxets (named for little falls); each led by a sub-sachem of the Narragansett. Pomham ruled the Shawmets, Tacomman ruled the Cowesetts and Potowomuts, and Saconoco presided over the Pawtuxets.

Native American settlement at the time of European contact focused upon near-coastal and coastal confluences of rivers and streams. Relatively large concentrations of dwellings were surrounded by a network of fields and collecting territories. The importance of waterways in Native landscape perspectives is reflected in their use as territorial and boundary markers as lands were transferred from Native to European possession. Roger Williams acquired the land that comprises today's Providence, south to the Pawtuxet River in 1638. Later in 1638, Saconoco transferred the Pawtuxet Purchase land to William Arnold, William Harris, William Carpenter, and Zachariah Rhodes.

Warwick Neck is included in the original Shawomet Purchase lands, executed in January 1642 (1643?) between Samuel Gorton and 11 followers and the Narragansett Indian sachem Miantonomi, with the sub-sachem Pomham witnessing the deed. Shortly after the Shawomet Purchase, William

Arnold and other Pawtuxet settlers attempted to drive Gorton and his followers from the area, and convinced Pomham to place his lands under the jurisdiction of the Massachusetts Colony. Massachusetts sent troops to seize the cattle of the Gortonists, arrested Gorton and six followers, and took them to Boston for trial on counts of heresy and sedition. After being put in irons and forced to work in various towns throughout the colony for a winter Gorton and his followers were set free, but were banished from all territory under the jurisdiction of the Massachusetts and Plymouth Colonies. Gorton lived briefly on Aquidneck Island, and in 1644–1645 sailed to England to petition Parliament to secure his Shawomet lands. In 1646 Massachusetts was ordered by Parliament to reinstate the Shawomet purchasers their lands and was barred from further attempts to exercise jurisdiction over them. In gratitude Gorton changed the name of the settlement to Warwick, commemorating the supportive Earl of Warwick.

During the time that Gorton was being held prisoner in Massachusetts, the Narragansett Sachem Miantonomi was murdered by rival Mohegans, possibly with the support of Massachusetts Colony political factions.

When the Narragansetts saw that Gorton was freed by Massachusetts they believed he had powerful allies in England and placed themselves under the “protection of the English,” seeking relief against Massachusetts Colony. Pomham however, remained allied with Massachusetts and refused to leave his Shawomet territory, encompassing Warwick Neck. He asked Massachusetts for assistance against the Gortonists and protection from the Narragansett Indians. Massachusetts Colony sent 11 men to help Pomham erect a fort. Today’s Paine Street and Fort Street intersection is the reputed site of the fortification, known historically as Pomham’s Fort.

In 1665, after constant conflicts between the Shawomets and the Gortonists, the King’s Commissioners ordered that Pomham and his people remove themselves. They remained however until more widespread hostilities broke out during King Philip’s War (1675–1676).

In July 1676, a force of approximately 80 Narragansetts who had joined King Philip’s struggle against the English were camped on Warwick Neck awaiting coordination for an attack on Newport. A force of 300 Colonial soldiers and Indian auxiliaries marched under the leadership of John Talcott and killed or captured 67 of the Narragansetts. By August of 1676, Philip had been killed and the Native attempts to regain their former holdings had ceased. In the spring of 1677, Gorton and his followers returned to Warwick Neck. After the conflict, the area’s Native Americans became increasingly marginalized as English settlement expanded virtually unchallenged in the wake of the Native’s loss of legal and social status.

Phase I(c) Investigations

PAL conducted the Phase I(c) surveys in 2007 and 2008. Because the sewer lines will be constructed beneath existing roadways, the survey methodology has relied primarily upon monitored excavations with a flat-bladed backhoe. The methodology employed for the Phase I(c) surveys of the Bayside I, Bayside II, Bayside III, Longmeadow (and supplemental work along Tidewater Drive) sewer segments included selection of representative areas previously assessed as archaeologically sensitive for machine trenching. Within those areas assessed as sensitive, streets were marked with paint to indicate where machine trenching was planned. Following coordination

with Digsafe and the Warwick Water Department, the asphalt was saw cut and removed. A flat-bladed backhoe was utilized to remove the roadbed and any fill layers to a depth where original soils were observed.

Any artifact concentrations or features resulting from cultural activity were documented (mapped and photographed) but no further excavations were completed, pending ongoing communication and consultation with the Narragansett Indian Tribal Historic Preservation Office (NITHPO), WSA, and Environmental Protection Agency (EPA). Once features and material concentrations were noted, they were covered with plastic, trenches were back-filled, and the asphalt street surface was restored. Summary reports detailing the methodology, results, and recommendations for further considerations have been completed for each segment (Bayside I, Bayside II, Bayside III, Longmeadow, and Tidewater Drive).

Synthesis of the results of Phase I(c) survey to date indicates that a large and potentially significant concentration of Native American cultural materials and features exists in the northern section of Warwick Neck, south of Mill Cove and focused around the Mill Cove Brook (Figure 3). Designated the Mill Cove Site, it contains a wide range of feature and activity areas resulting from Native occupation and habitation between approximately 3,000 and 350 years ago.

Evaluation of features began in May 2008 and was suspended in June 2008 pending ongoing consultation between the EPA, Narragansett Indian Tribe, and WSA. This status report details the archaeological methods employed for the work to date, results of investigations within the Mill Cove Site, preliminary interpretations of results to date, and recommendations for further considerations of cultural resources identified to date, relative to planning proposed sewer construction.

Evaluation Phase Machine Trenching

The methodology for exposing features and material concentrations during the initial phase of the evaluation study was consistent with that employed during earlier, Phase I(c) fieldwork. The roadbed was marked with paint, sawcut, and removed along the construction easement as indicated on project plans. A flat-bladed backhoe was used to systematically remove the roadbed and any fill strata to the fill/subsoil interface. Exposed surfaces were cleaned by hand with shovel and trowel to determine if features were present. Any features identified through this process were documented (mapped and photographed) but no further excavations were completed, pending ongoing communication and consultation with the NITHPO, WSA, and EPA. Once features and material concentrations were noted, they were covered with plastic, trenches were back-filled, and the asphalt street surface was restored.

Figure 3 illustrates segments of sewer construction easements along roadways within the Mill Cove Site (Bayside I Sewer Segment) that have been subject to machine-assisted removal of road surfaces, and excavation to below the roadbed/soil interface to expose and document archaeological materials and/or features. Each area is described in more detail below:

River Vue Avenue

Machine Trench 1 was dug along River Vue Avenue. The trench extended along the roadway beginning in front of house number 110 (M.H. 4+50) and extended along the sewer easement east, terminating in front of house number 23 (M.H. 5+00). Six archaeological features were exposed in Trench 1 (Figure 4). Additionally, several small concentrations of charcoal fragments, and two probable post molds were noted. These features include small (less than 50 cm diameter), medium (between 50 and 100 cm diameter), and large (greater than 1 m diameter) pits and material deposits readily observable within intact subsoil matrices. The pits are remnant truncated soil deposits colored by charcoal fragments and decomposed organics (Appendix A). Fragments of quartz chipping debris were in association with Feature 4. Digital images of representative examples of the Machine Trench 1 features are illustrated in Figure 5.

Feature 6 in Trench 1 is a concentration of fragmented mammal long bone. The soil matrix around the bone fragments appeared to be undisturbed subsoil with no evidence for an associated feature noted. No artifacts or other material culture were noted in immediate proximity to the bone fragments.

Posner Avenue

Trench 2 of the 2008 evaluation within the Mill Cove Site was dug along a section of Posner Avenue. It extended from house number 11 south to a point approximately 20 feet (ft) north of the intersection of Posner and Riverview Avenue. The trench was dug along the sewer construction easement as marked on project plans. Features exposed in Trench 2 included several identified during previous (Phase I[c]) study (MT-5, 2007) and an additional six in newly exposed soils (Figure 6). These features include post molds marking locations where stakes or structural supports once stood, and medium-sized (50 to 100 centimeters [cm] in diameter) soil stains containing charcoal fragments. Some contain shell, lithic chipping debris, aboriginal ceramic sherds, and/or rocks fractured by association with fire (Appendix A). Digital images of representative examples of the Machine Trench 2 features are illustrated in Figure 7.

Mill Cove Road

Trenches 3 and 4 of the 2008 evaluation fieldwork on the Mill Cove Site were dug along Mill Cove Road. Trench 3 extended from a point just east of the Mill Cove Stream and Mill Cove Road crossing to a point approximately 20 ft west of the intersection of Wentworth Avenue, on Mill Cove Road. The trench was dug along the sewer construction easement as marked on project plans. Seven features were exposed during the excavation of Trench 3. These features included small (1 to 50 cm) and medium-sized (50 to 100 cm) generally circular truncated pits, one large (greater than 1 m diameter) pit feature, and two apparently isolated post molds (features 5 and 6) (Figure 8) (Appendix A). Digital images of representative examples of the Machine Trench 3 features are illustrated in Figure 9.

Machine Trench 4 was dug over the course of several days in two segments; the first was dug from east to west, beginning in front of house number 147 extending to the front of house number 157. The second segment was dug west to east, beginning in front of house number 176 extending to, and intersecting into, the remnant western limit of the initial trench in front of house number 157.

Trench 4 was segmented into a western half and an eastern half. In order to facilitate documentation and avoid overlapping of assigned feature number designations, features in the eastern segment were numbered sequentially from 1 to 22 as they were encountered, and features in the western segment were given letter designations A through Z, and then double letters (AA, AB, AC, AD, and so on) resulting in features indicated as A through AN. As a result of this labeling, two features in the zones where the trenches intersected have double designations; Feature 22 /AF and Feature 21/AE (Figure 10).

Figure 10 illustrates the complexity and clustering of the many (50+) features identified within Machine Trench 4 along Mill Cove Road. They include a high density and wide range of sizes and types, collectively characteristic of a “living surface” resulting from a mosaic of site occupation and use (Appendix A). Clustered post molds are suggestive of structures and food processing. The size and composition of features in plan reflect food processing activity (cooking, storage, refuse disposal) and the variety of feature forms collectively indicate that this area was one of domestic space. Digital images of representative examples of the Machine Trench 4 features are illustrated in Figure 11.

Lippitt Avenue

Machine Trench 5 of the 2008 evaluation study of the Mill Cove Site was dug on Lippitt Avenue. It was excavated west to east in two segments, facilitating the crossing of a zone dominated by wetland soils. Excavation along the sewer construction easement began in front of house number 148 and extended east for approximately 60 ft (where fills and wetland soils were encountered). The second segment of Trench 5 excavation resumed in front of house number 128 and extended east, terminating at a point along the easement parallel to the midpoint between house numbers 122 and 118.

Three features were exposed in the western segment of Trench 5. Twenty three (23) features were exposed in the eastern segment of Trench 5 (Figure 12) (Appendix A). The features in Trench 5 along Lippitt Avenue are densely concentrated and reflect an intensity of occupation and use of this area for multiple purposes. Grouped post molds are among the Lippitt Avenue feature inventory and numerous features of various (small, medium, and large) size ranges contain aboriginal ceramics, shell, lithic debitage, and animal bone.

Two features in Trench 5 on Lippitt Avenue (#1 and #15) are of particular concern as they are concentrations of bone consistent with human cranial fragments. PAL made a tentative determination in the field that they are human, are contemporaneous with other spatially-related archaeological features, and will require verification and appropriate follow through. After they were photographed, they were immediately covered. These features likely reflect burial practice and/or ceremonial aspects of the associated culture(s). The cultural, legal, and historical implications of any suspected burials should be subjects of the ongoing discussions between the EPA, NITHPO, SHPO, and WSA. Digital images of representative examples of the Machine Trench 5 features are illustrated in Figure 13.

Whipple Avenue

Machine Trench 6 and Machine Trench 7 of the 2008 evaluation study of the Mill Cove Site were excavated along two sections of Whipple Avenue. Machine Trench 6 was dug along the sewer easement in front of, and extending along the length of the lot of house # 123. The length of Trench 6 proved to be entirely disturbed by previous street and utility work. There were no cultural features or archaeological materials noted within Trench 6 on Whipple Avenue.

Trench 7 was also excavated along a section of Whipple Avenue, west of the Trench 6 location. Trench 7 was excavated west to east, beginning at a point 25 ft east of the Tidewater Drive and Whipple Avenue intersection, heading east along the Whipple Avenue sewer construction easement and terminating at the planned manhole at station 6+45, in front of house number 143. In contrast to Trench 6, Trench 7 along Whipple Avenue contained intact subsoils and evidence of multiple cultural features. The north side of the machine trench displayed disturbance associated with utility installations, but the south remained sufficiently intact to contain features in meaningful contexts.

Figure 14 illustrates the locations of 49 features noted within Trench 7. These features vary widely from small post mold impressions to large (exceeding 1 m diameter) pit features. There were areas within the trench where features were so densely clustered as to be described as a “living surface.” Feature 5 was singularly noteworthy as a relatively recent post-contact period deposit; all other Whipple Avenue Trench 7 features are believed to be affiliated with pre-contact occupation and or habitation. Noted cultural materials and feature-associated deposits included burnt rock, shell and bone fragments, stone tool fragments (bifaces and projectile points) and chipping debris (Appendix A). Digital images of representative examples of the Whipple Avenue Machine Trench 7 features are illustrated in Figure 15.

Considerations along Tidewater Drive, Longmeadow Avenue and Ocean Avenue

While not subject to the evaluation phase of investigation that is the main focus of this status report, previous I(c) study within the Bayside II and Longmeadow sewer segments, and subsequent machine trenching along Tidewater Drive, have contributed to the Mill Cove Site feature inventory. Accordingly, those results will be briefly reviewed.

Intact soils characterized Machine Trench 2, dug along Longmeadow Avenue during Phase I(c) testing. One 35 cm round feature was found 7 m from the west end of the trench, and an additional 7 features and 12 post holes were located in the eastern half of the trench. These features will require evaluation and possibly mitigation.

Machine Trench 3 was excavated along Ocean Avenue during previous Phase I(c) study. This trench was extremely rocky at the north end of the trench. In the southern extent of the trench, bone fragments were discovered at a depth of 30 to 40 cm below surface (cmbs), immediately below the roadbed. The deposits surrounding the bone appeared to have been truncated and compressed by the construction of the road and the noted bone is fragmented into small pieces. This deposit is a very strong candidate for a burial feature. It was immediately covered with plastic and then resurfaced with gravel pending further considerations by WSA, PAL, RIHPHC, and the NITHPO. Quartz and Attleboro red chipping debris and some shell were also observed in this feature. Designated Machine Trench 3, Feature 1, this feature is of serious concern as a ceremonial

deposit. It will require verification, evaluation, and consideration as the undertaking moves forward.

Machine-assisted Phase I(c) survey along Tidewater Drive resulted in the identification of archaeological deposits that reflect Native American occupation and activity within the project area. Specifically, features have been documented in Machine Trench 3, 4, and 7 (see Figure 3). These features confirm that elements of the Mill Cove Archeological Site extend into the planned sewer construction easement(s) along Tidewater Drive. These features will require additional future evaluation/ mitigation considerations in planning the sewer installation.

Preliminary Interpretations

As noted previously, archaeological investigations to date within the Mill Cove Site have proceeded to the point of exposing features, mapping their positions within machine trench plans, and limited documentation of their characteristics. The SHPO, NITHPO, and WSA have been informed of the series of sewer segment presence/absence studies through receipt of proposals/permit application for the represented segments and subsequent summary memoranda for the Bayside II, Bayside III, and Longmeadow segments as well as for supplemental work along Tidewater Drive and for the proposed site evaluation through feature excavation within the Mill Cove Site, which is now pending and suspended awaiting discussions between EPA, NITHPO, and WSA. The EPA has entered the process within the past 12 months, and since then has received summary reports for the Bayside II, Bayside III, Longmeadow segments; for the supplemental Tidewater Drive investigation; and a copy of the proposal for evaluation/ mitigation within the Bayside I segment.

It has been the stated position of the NITHPO that the Narragansett Indian Tribe has interests in and concerns for the Mill Cove Site as an undertaking subject to the Section 106 consultation process. While meetings between EPA, NITHPO, and WSA have taken place and there is consensus regarding the importance of Narragansett Indian participation in the anthropological and archaeological aspects of the ongoing studies described in this status report, the operational specifics of that involvement remain undetermined. Alan Leveillee, the archaeological principal investigator, notes that features within the site reflect both secular and sacred aspects of Native American lifeways and to proceed with excavation in the absence of on-site Native American representation would be to do so in an atmosphere of acrimonious uncertainty. Accordingly, the features described and discussed in this status report remain unexcavated pending further discussion and consultation between EPA, NITHPO, SHPO, and WSA. As such, interpretations of the features are limited and preliminary.

Results of investigations to date indicate that the Mill Cove Site is a result of long-term and intensive Native American occupation of the Warwick Neck section of the city of Warwick.

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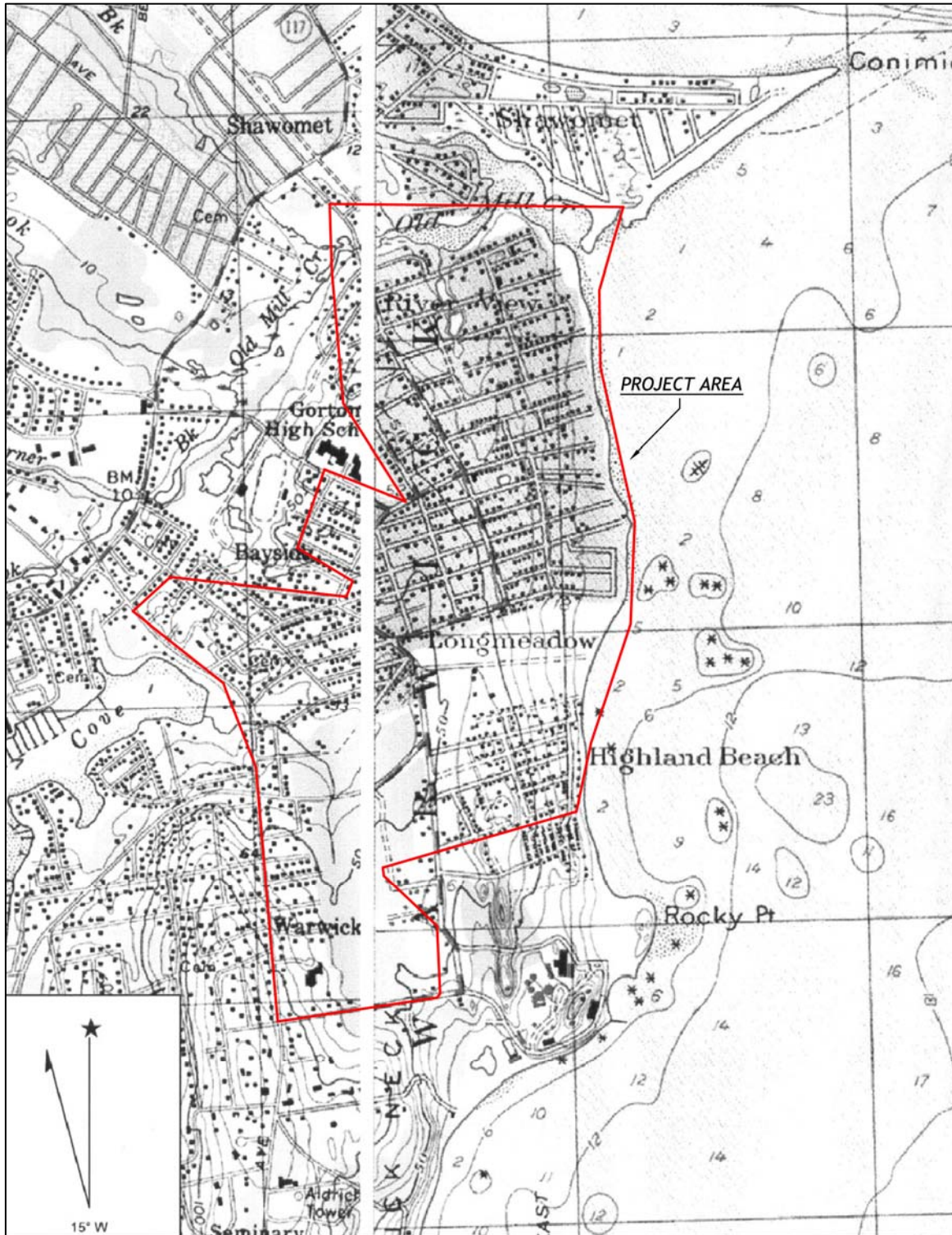


Figure 1. Location of the Bayside Sewers Segment, Warwick, RI.

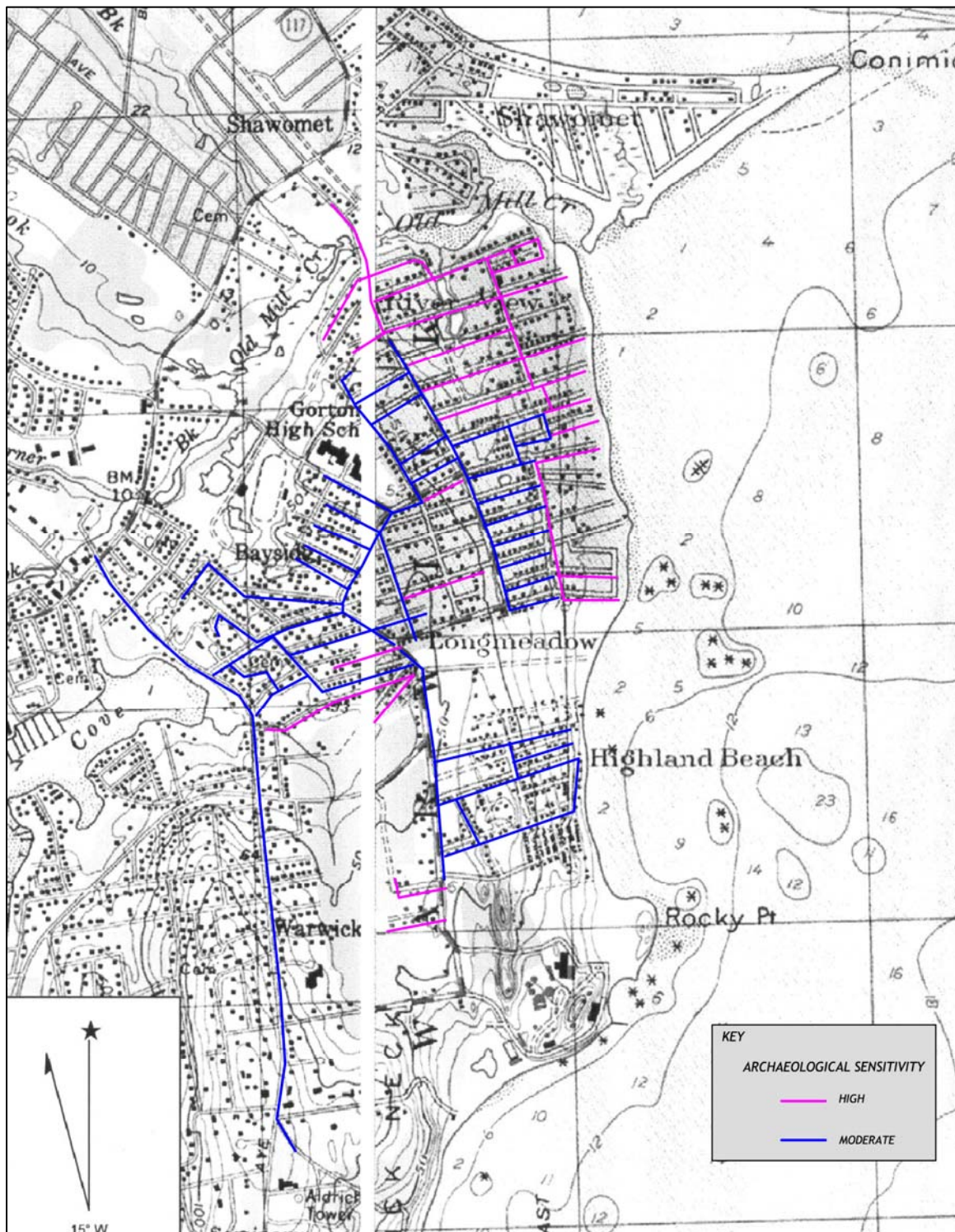


Figure 2. Assessed archaeological sensitivity within the Bayside Sewer Segment.



Figure 3. The Mill Cove Archeological Site- Trenches to date with archaeological features.

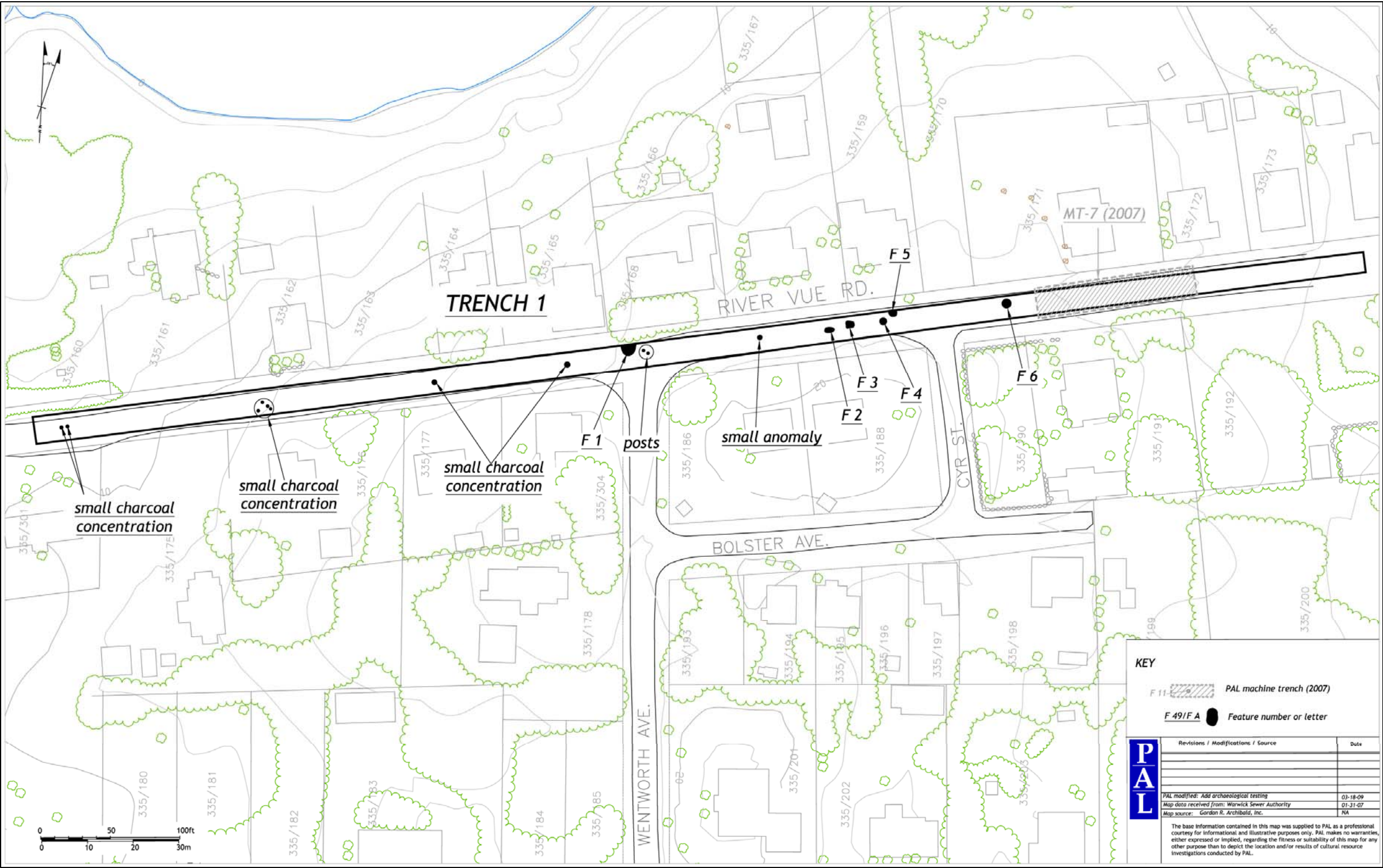


Figure 4. Machine Trench 1 along River Vue Road.



Feature 3



Feature 5



Feature 6- mammal bone fragments

Figure 5. Digital Images of Features in Machine Trench 1, River Vue Avenue.

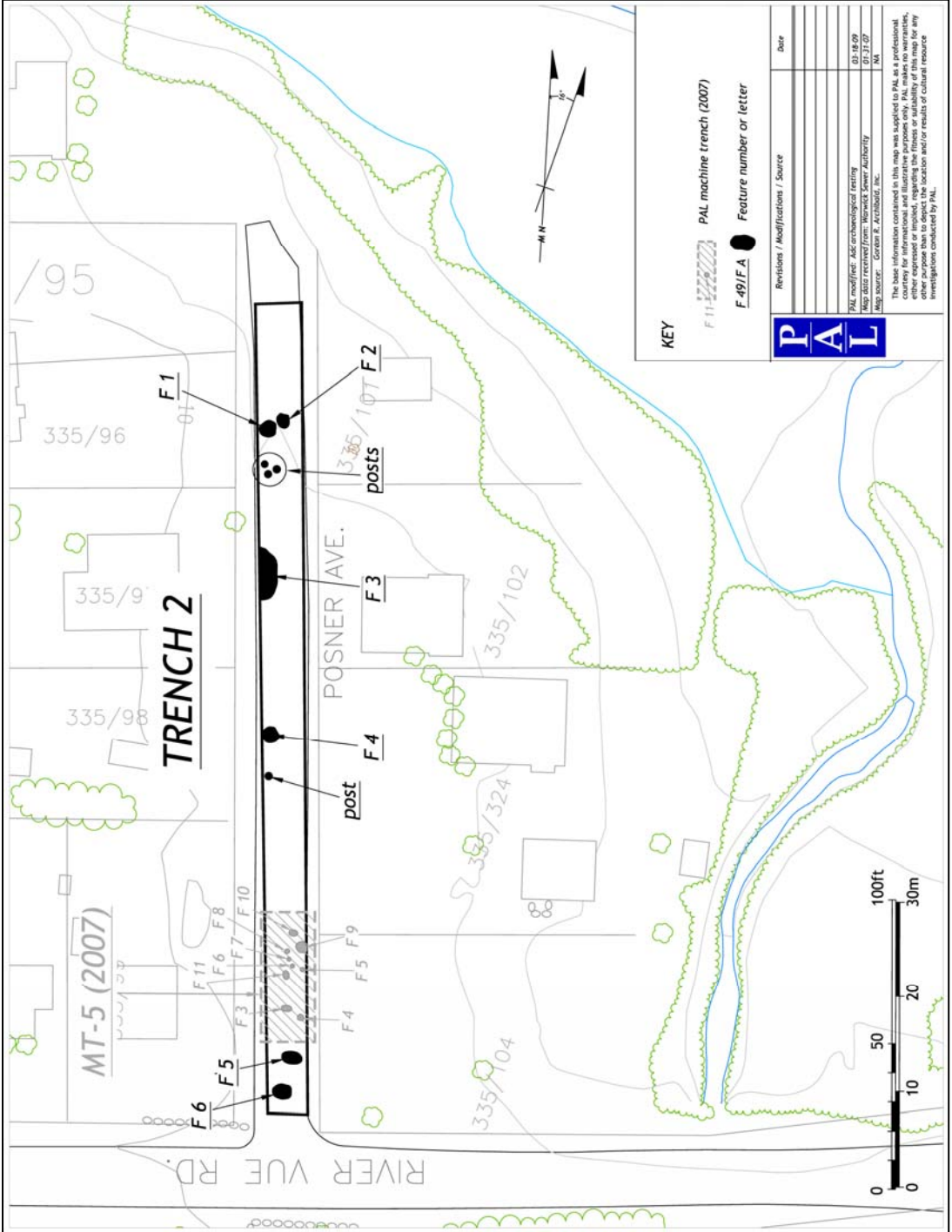


Figure 6. Machine Trench 2 on Posner Avenue.



Features 1 & 2



Feature 4

Figure 7. Digital Images of Features in Machine Trench 2, Posner Avenue.

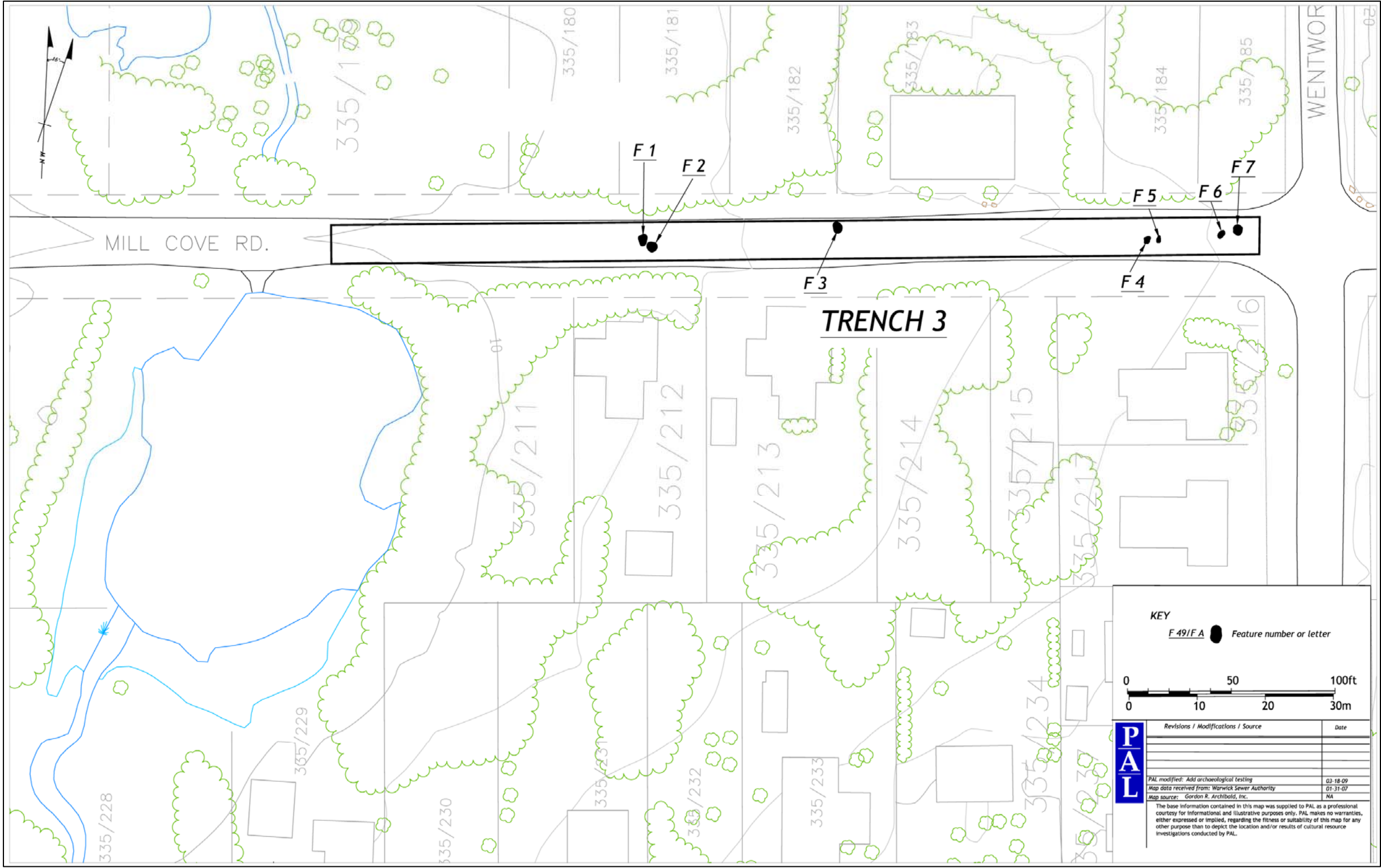


Figure 8. Machine Trench 3 on Mill Cove Road,



Features 1 & 2



Feature 3



Features 4 - 7

Figure 9. Digital Images of Features in Trench #3, Mill Cove Road.

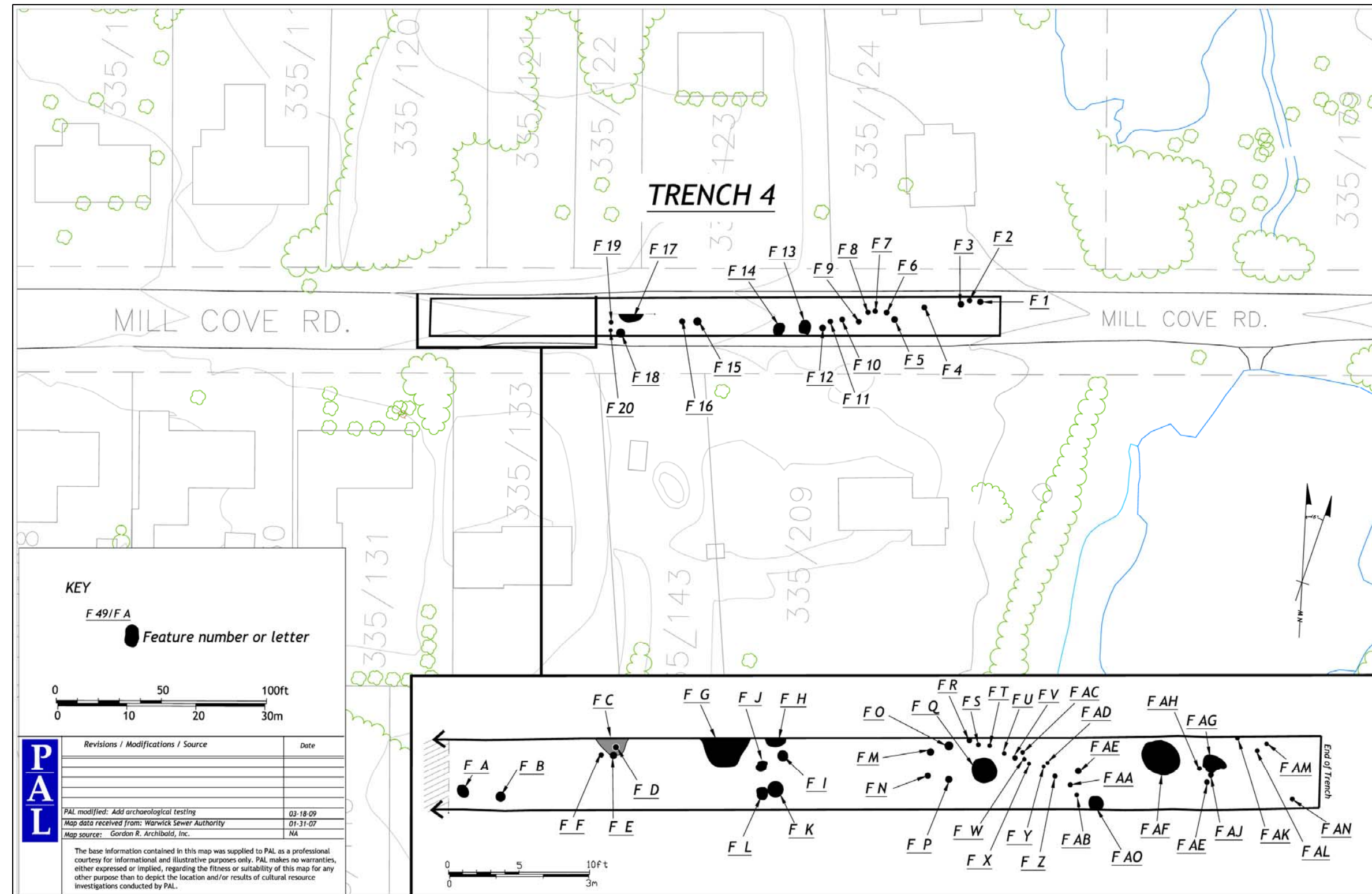


Figure 10. Machine Trench 4 on Mill Cove Road.



Features 5 and 6

**Area surrounding Features
12, 13, & 14**



**Feature 22 and surrounding post
molds**

Figure 11. Digital Images of Features in Machine Trench 4, Mill Cove Road.

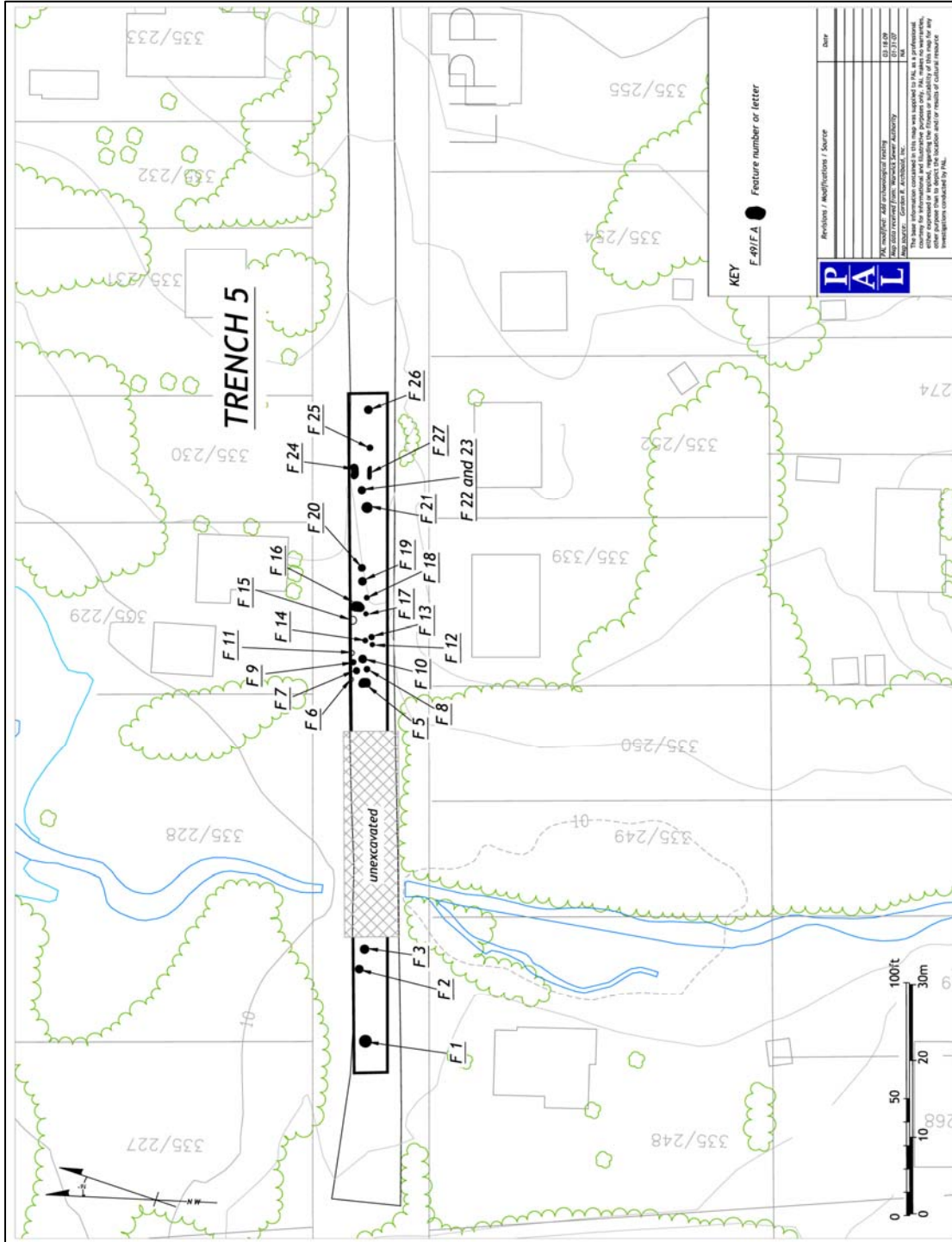


Figure 12. Machine Trench 5 on Lippitt Avenue.



Feature 15



Feature 4- multiple posts



Features 21, 22, and 23

Figure 13. Digital Images of Features in Machine Trench 5, Lippitt Avenue.

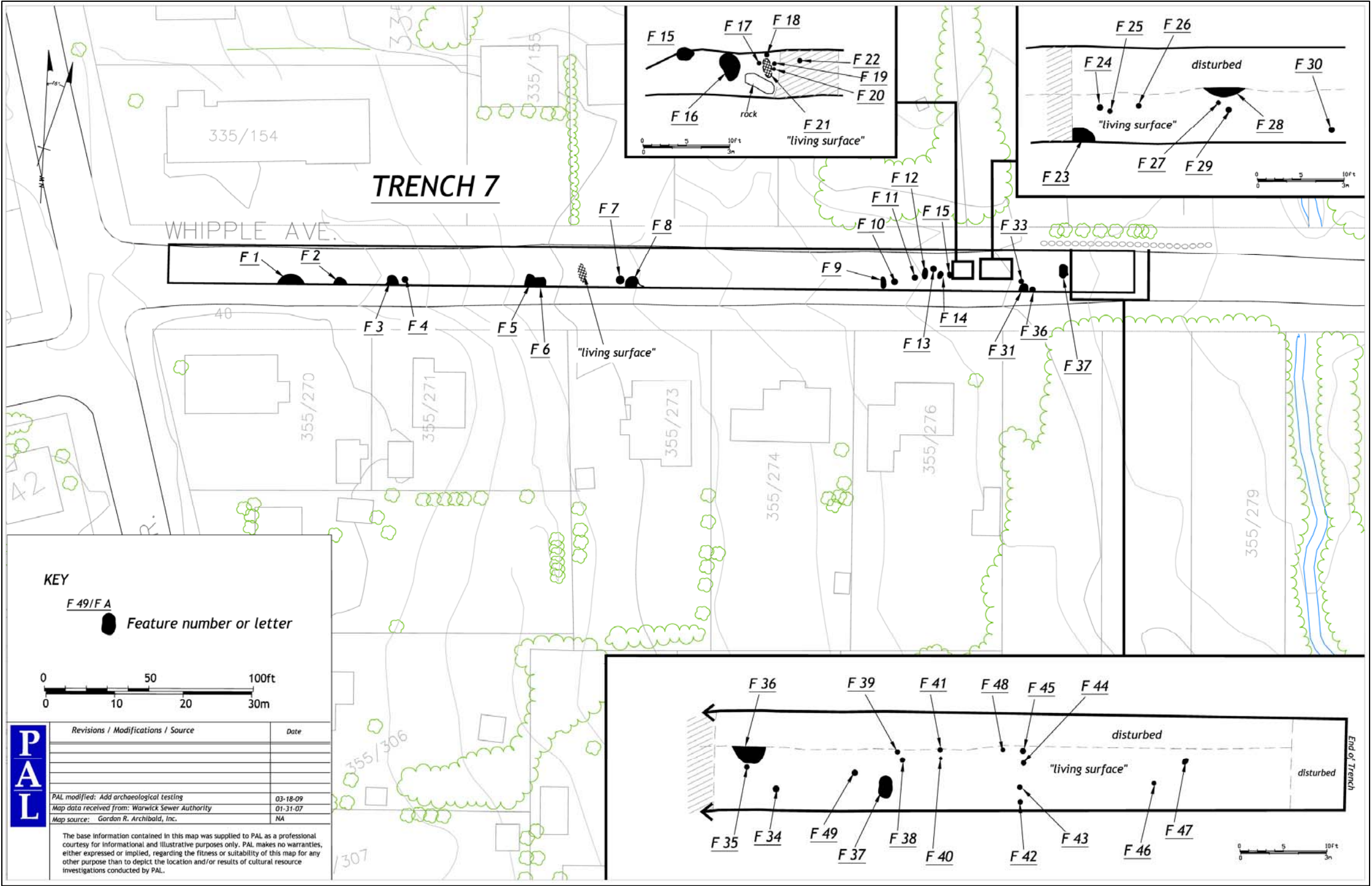
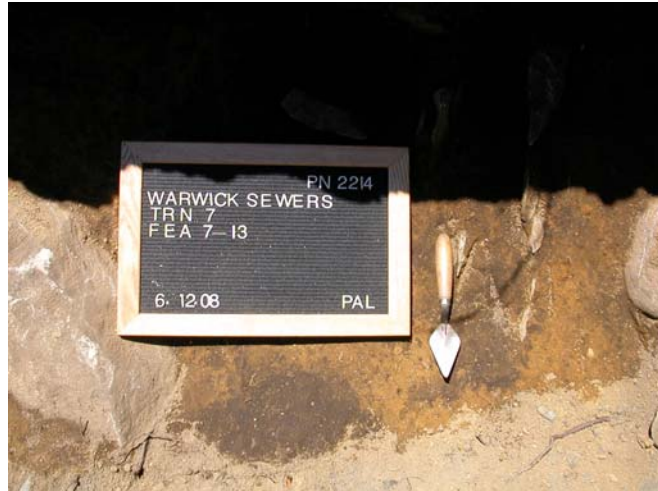


Figure 14. Machine Trench 7 on Whipple Avenue.



**Feature 5 Historic trash
deposit**



Features 7 thru 13 area



**Feature cluster in central
trench section**

Figure 15. Digital Images of Features in Trench 7, Whipple Avenue.

Appendix A.

Feature Description Tables by Trench, Mill Cove Archaeological Site, Warwick, RI.

Trench 1. River Vue Avenue

Feature #	Data	Comment
1	65-x-135 cm	Charcoal- north wall of unit
2	25-x-90 cm	In front of house # 50
3	65-x-85 cm	In center of trench
4	80-x-180 cm	
5	60-x-110 cm	Parallel to house 350 driveway
6	Bone in B ₁ matrix	Fragments of mammal bone - long bone

Trench 2. Posner Avenue

Feature #	Data	Comment
1	80 cm diameter	Fire-cracked rock; shell fragments; charcoal; depth 80 cm
2	40-x-35 irregular	Soil stain note 4 or 5 small post molds south of Feature 1
3	35-x-85 south wall of trench	Large & subtle - as much as 2 m north-south; feature fill 2.5y matrix 10yr5/6
4	60 cm diameter	Black - Aboriginal Ceramics; charcoal fragments
5	25-x-20 cm	Post mold
6	60-x-25 cm	Shell; quartz chipping debris; aboriginal ceramics

Trench 3. Mill Cove Road (East of Mill Cove Brook)

Feature #	Data	Comment
1	45 cm diameter	Dark brown mottled 40 cmbs
2	31 cm diameter	40 cmbs
3	103-x-163 cm	
4 & 5	40 cm diameter (#4)	#5 is a small post mold in close proximity to feature 4
6	30 cm diameter	Post mold
7	30-x-40 cm	Mottled anomaly

Trench 4. Mill Cove Road (West of Mill Cove Brook)

Feature #	Data	Comment
1	35 cm diameter	Dark brown - shell fragments possible post
2	30-x-60 cm irregular	Shell fragments
3	35 cm diameter	Some shell; 75 cmbs; lots of chipping debris; Levanna point; three associated small post molds
4	30 cm diameter	Post? 55 cmbs
5	35 cm diameter	Post?
6	15 cm diameter	Post
7	45-x-40 cm	Disturbed by plowing
8	Small stain with whelk shell	
9	Small deposit of shell fragments	
10	40-x-80 cm	55 cmbs
11 & 12	"small circular stains"	posts
13	35-x-110 cm	Large circle with quartz chipping debris; 60 cmbs
14	60-x-80 cm	Possibly 3 intersecting features - chert point and aboriginal ceramics
15	85-x-150	Possible 2 features - "living surface"
16	20 cm diameter	post
17	75 cm	Large multi-feature cluster—120-x-220 cm shell and fire-cracked rocks
18	20-x-95	Associated with #s 17, 19 & 20
19 & 20	West of 17 35 cm diameter	Two overlapping features
21	60 cm diameter	Black -----two small posts to immediate SW
22	1.5-x-2m	Large "living surface" many posts-possible structure
AO	50-x-50 cm diameter	
s,t,u,v,w,x,y,z,aa,ab,ac,ad,ae,ai,ah,r	Small- range from 5 to 9cm diameter	Post molds clustered
q	43 cm diameter	Bottom of fire-related pit? 10yr 2/2
n	post	Possibly associated with Q
o	13 cm diameter	post

Feature #	Data	Comment
m	9 cm diameter	post
i	10 cm diameter	post
h	25 cm diameter	Possible post into north wall
k	26 cm diameter	Possible post 10yr3/4
j	11 cm diameter	post
l	20 cm diameter	post
g	1-x-1 m	Extended into North wall described as "living surface"
c	59-x-36 cm	Extended into North wall-
d & e	Inside and associated with Feature c	E intersects with D
b	22 cm diameter	10yr3/6
a	19 cm diameter	In center of Feature C
aj, ak, al, am, an	4 to 7 cm diameter	posts
ao	30 cm diameter	Large post?

Trench 5. Lippitt Avenue

Feature #	Data	Comment
1	25-x-25 cm	65 cmbs; cranial bone fragments- probable human burial in front of house #148
2	30-x-30 cm	Shell and aboriginal ceramic fragments
3	25 cm diameter	Possible post
4	Area of 20+ post holes in a 5-x-3 m area	Ceremonial?
5	75-x-65 cm	Burnt rock feature with many associated post molds
6	50 cm diameter	
7	50 cm diameter	
8	50 cm diameter	
9	25-x-25 cm irregular	
10	65 cm diameter	Round with associated fire-cracked rock
11	30-x-20 cm	
12	30 cm diameter	round
13	30 cm diameter	round
14		Shell fragments
15	80-x-100 cm	Bone fragments including tooth probable human burial

Feature #	Data	Comment
16	110 cm diameter	Quartz biface and aboriginal ceramic fragments
17	40 cm diameter	
18	40-x-60 cm	Shell concentration
19	40 cm diameter	
20	35 cm diameter	Fire-cracked rock
21	106 cm diameter	Round and dark- shekk, quartz cd, fire-cracked rock
22 & 23	150-x-150 cm	Double feature dark feature fill with shell
24	90 cm diameter	Shell, bone fragments, chipping debris
25	40-x-40 cm	Extends into south wall shell and bone fragments
26	80 cm diameter	Into south wall
27	30-x-90 cm	Extends into south wall

Trench 7. Whipple Avenue

Feature #	Data	Comment
1	75 cm diameter (generally oval)	30 cmbs; 10yr3/2; shell fragments
2	Dense area of shell	Too deep to enter trench; 1.5m deep 10yr2/2
3	Large oval area of fragmented shell	1-2 m deep
4	small	Possible post- too deep to go into trench
5	Historic dump/fill	Historic; metal; tin cans; butchered bone; deep
6	Intruded into by 5	10yr2/2 possible living surface just east of this feature
7	5 cm diameter	Small post
8	45 cm diameter irregular and oval	Quartz chipping debris in 10yr3/2 stain
9		Possible truncated pit feature 10yr2/2
10		Possible post or small pit ? projectile point associated
11		Possible post or small pit ?
12		Irregular pit- possible rock lining
13		Truncated pit
14		Oval truncated pit

Feature #	Data	Comment
15		Possible pit
16		Post or small pit feature
17–22 (except 21)		All post molds approx 5 cm diameter.
21		Irregular stain surrounded by 17–22 posts
22		Stain - possible feature
23		Pit 10yr3/2
24–29 (except 28)		Posts 5–7 cm diameter all 10yr2/2
28		Possible truncated pit 10yr3/2
30	7 cm diameter	Post; 10yr 2/2
31	39 cm diameter	Quartz chipping debris; this feature intrudes into 32; mottled 10yr2/2 and 2.5y6/6
32		Post mold cut by feature 31
33–35	5 cm diameter	Posts; 10yr2/2
36		Possible pit or “living surface” 10yr3/2
37	2 m diameter	Oblong stained area with graphite and burnt ashy area
38–49	5 cm diameter	Post holes; 10yr2/2